

CLAIMS

1. A method for manufacturing a compound semiconductor epitaxial substrate comprising a step of epitaxially growing an InGaAs layer on an InP single crystal substrate or on an epitaxial layer lattice-matched to the InP single crystal substrate under conditions of  
ratio of V/III: 10 - 100,  
growth temperature: 630°C - 700°C, and  
growth rate: 0.6 µm/h - 2 µm/h.
2. The method according to claim 1, wherein the InP single crystal substrate has a plane direction accuracy of  $\pm 0.05^\circ$  in the (100).
3. The method according to claim 1 or 2, wherein the epitaxially growing is carried out by using MOCVD.
4. The method according to any of claims 1-3, wherein gallium raw material used for epitaxially growing is selected from the group consisting of trimethyl gallium and triethyl gallium.
5. The method according to any of claims 1-4, wherein indium raw material used for epitaxial growing is trimethyl indium.
6. The method according to any of claims 1-5, wherein arsenic raw material is arsine.
7. A method for reducing concave defects in a compound

semiconductor epitaxial substrate comprising a step of  
epitaxially growing an InGaAs layer on an InP single  
crystal substrate or on an epitaxial layer lattice-matched  
to the InP single-crystal substrate under conditions of

5     ratio of V/III: 10 to 100,  
      growth temperature: 630°C - 700°C, and  
      growth rate: 0.6 µm/h - 2 µm/h.

8. A compound semiconductor epitaxial substrate obtained by  
using the method according to any of claims 1-6.

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